

Aquaculture Visual Assessment¹

Taylor Shellfish Farms, Oakland Bay Floating Bag Farm

Mason County Application #SEP2023-00007

Process Overview

In general, the degree of visual impact from aquaculture farms is highly variable. Depending on several elements, including landscape setting, the viewers, siting and design, aquaculture facilities and activities can have a negative or positive effect on an area's visual quality. Washington State Department of Ecology developed a methodology for evaluating floating aquaculture facilities, and it is a useful tool for objectively assessing the visual impacts associated with this project.

Landscape Setting

The environmental condition of the landscape, its spatial definition, adjacent scenery and bank height all potentially affect the visual impact. Open shorelines and large embayments are generally less susceptible to visual impact than small enclosed embayments.

The Viewer

The attitude of the viewers, their number, and the duration of their viewing all affect potential visual impact. Potential visual impacts increase as the number of viewers and their viewing time increases. Additionally, aquaculture may be a source of visual interest as an intrinsic and historical Puget Sound industry.

Siting and Design

Siting and design variables, including profile, orientation, color, materials, and form, all affect visual impacts. At distances greater than 1,500 – 2,000 feet offshore, the visual presence of most facilities is reduced to a line near the horizon. Aquaculture developments that repeat the plane of the beach can have less visual impact than those that project vertically above the surface of the water. In general, blues and greens complement the natural setting, grays and earth tones are neutral, white and black can be variable in their response to lighting, shadowing, and glare, and oranges, yellows, and reds have the highest impact.

Mitigating Measures

When feasible, aquaculture facilities should be located in waters offshore:

- Culturally modified landscapes, preferably those with existing commercial/industrial maritime activity;
- Rural or uninhabited shorelines;

¹ Derived from State of Washington, Department of Ecology Aquaculture Siting Study, 1986, and EDAW Visual Impact and Ecological Concerns Assessment, January 1998

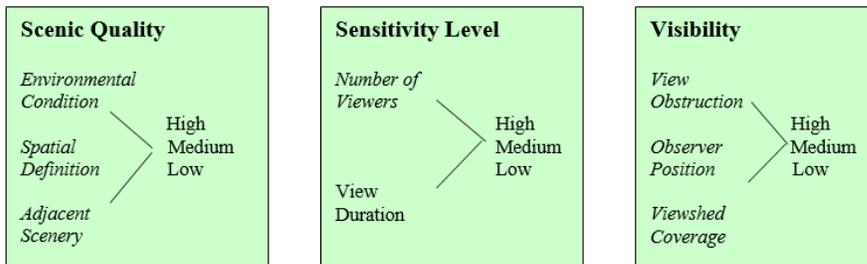
- Low bank shorelines; or
- Open shorelines

When feasible, aquaculture facilities should be sited or designed to be:

- 1,500 to 2,000 feet offshore (distance dependent on height above sea level of key observation points);
- Horizontal in profile;
- Incorporated as part of, or designed to appear as docks or marinas;
- Limited in overall size and surface coverage so as not to cover more than 10% of normal cone of vision;
- Of a color which complements the dominant blue/green colors of Puget Sound; **or**
- Ordered and of limited variations in material and color.

Visual Impact Inventory and Analysis

The Inventory Process – Components and Sub-categories



The above boxes illustrate the three visual components and their respective sub-categories. For each sub-category, a high, medium or low rating is given along with a rating summary.

For a description of the project details, please refer to Project Overview, State Environmental Policy Act checklist, and project maps.

Visual Impact Inventory and Evaluation Ratings for Scenic Quality

Sub-category: Environmental Condition

Description: Capacity of landscape to accept Human Alteration without losing its natural visual character.

Rating: Moderate Impact

Moderate Rating Description: Distinctive landscape character, public parks or use areas (views of forests and snow capped mountains); Larabee and Camano Island State Parks; or areas with visible evidence of human activity, but not at a dominating level (residential development, docks, or piers).

Rating Summary: The project site is zoned Rural and is moderately developed along the southern and minimally developed along the northern shoreline with homes. Timberlands and port facilities, including aquaculture FLUPSYS, gravel barge, log boom storage, lumber mill and marine traffic occupy other areas of the shoreline. The floating farm is located in a position that was historically a commercial log boom lease area and would be adjacent to existing mussel rafts not operated by the applicant.

Sub-category: Spatial Definition

Description: Degree of spatial enclosure and volume created by the flat plane of the water body (or beach) and the surrounding landforms.

Rating: Moderate Impact

Moderate Rating General Description: Concave embayment $\frac{1}{2}$ mile to 2 miles across; or open shoreline where far-shore is less than two miles away (e.g. Hood Canal, Budd Inlet).

Rating Summary for Project – The project site is in Oakland Bay, a concave embayment greater than $\frac{1}{2}$ mile, but where views from open shoreline are less than 2 miles away.

Sub-category: Adjacent Scenery

Description: Adjacent shoreline edge, landform, and vegetation which define the embayment. Influence, detail, and clarity diminish with distance. In general, impact of this variable increases as the degree of enclosure increases, or as the embayment size or the distance to the opposite shoreline decreases.

Rating: Moderate Impact

Moderate Rating General Description: Some variety of form, line, color and texture. Adjacent landforms 30-60%, moderate surface variation, limited rock outcrops or exposed cliffs; mature vegetation but generally continuous pattern; or adjacent scenery $\frac{1}{4}$ to 1 mile away.

Rating Summary for Project: The project site is along open shoreline in a rural landscape. Lying in front of residential homes along the shoreline, there is currently visual disruption to the scenery. Additionally, because it lies consistently low and flat along the water surface, its visual impact to adjacent scenery is very limited.

Scenic Quality Summary – For this component, the three sub-categories rated Moderate, Low and Low with an overall evaluation rating of **Moderate**. The proposed site is situated in mixed use area, where rural residential homes are interspersed with port and industrial properties. These commercial activities are historical and current fixtures within the viewshed. Aquaculture activities have occurred throughout Oakland Bay, including FLUPSYs, in substate, on bottom and near bottom culture, rafts, dikes, graveling and dredging as part of culture management.

Visual Impact Inventory and Evaluation Ratings for Sensitivity Level

Sub-category: Number of Viewers

Description: As the number of viewers increases, the potential for visual impact increases. Aquaculture facilities offshore of high-density residential developments or public parks will affect more viewers than those offshore of vacant or agricultural land uses. Viewing angle and distance are critical for viewers to absorb alteration to the scenery.

Rating: Moderate Impact

Moderate Rating General Description and Summary: The project site is located along a low-density rural residential and forested area. The development lies low on the water surface and greater than 1,000 feet away from any point along the shoreline and is therefore not visible to many viewers. Views along the roadway are not extensive and are regularly broken by mature vegetation and houses.

Sub-category: View Obstruction

Description: The potential for visual impact is higher along shorelines where there are sustained views. The longer a viewer scrutinizes a scene, the greater the opportunity to perceive objects and details which are visually disruptive or out of character with the landscape setting. Those facilities lying above the water surface allow for sustained scrutiny, but developments lying below the water surface allow for decreased viewing and have decreased visual impact.

Moderate Rating General Description and Summary: The project will sit less than 12" above water surface. The majority of homes and viewpoints 1,000' – 1,500' are lower than 55' above sea level. Those with high bank views are over 1,500' from the project extent.

Sensitivity Level Summary – The overall visual impacts based upon the two sub-categories is **Moderate**

Visual Impact Inventory and Evaluation Ratings for Visibility

Sub-category: Observer Position

Description: For floating aquaculture facilities, visibility is critically linked to distance off-shore and height of key observation points.

Moderate Rating General Description and Summary: This floating system is constructed of black HDPE which was selected for UV resistance and uniformity of color. The system will be constructed and maintained to provide uniformity in its layout. The system lies less than 12" above and level with the water surface. The entire lease boundary is 2% of the total surface area of Oakland Bay, with the constructed system less than 0.5% of the surface area. The system is placed at least 1,000' from existing residential homes, with most homes located over 1,500' away.

Sub-category: Viewshed Coverage

Description: Percentage of normal cone of vision occupied by proposed aquaculture facility. This component is directly linked to distance off-shore and applies to floating facilities with sustained viewing opportunity.

Moderate Rating General Description and Summary: This project lies level on the horizon at less than 12" above the water surface. Based on Ecology's assessment tool, this project will cover less than 10% of the cone of vision as viewed from 75% of key observation points.

Visibility Summary: Based on the rating evaluations for the two sub-categories, the overall rating for visibility is **Moderate**.

Final Assessment and Visual Impact Classifications

To determine the final rating and classification of the visual impact for the floating bag project, each sub-category rating is compared to the classification matrix provided in the Department of Ecology Aquaculture Siting Study. With an overall rating of Moderate for both Scenic Quality and Sensitivity Level, the Visibility component can be any rating level for a classification outcome of Class III, Moderate Impact. These areas are where permanently visible aquaculture facilities will be visually evident. To mitigate impact, projects should remain visually subordinate to the project setting. The project design should borrow from the colors of the natural setting, scale should be small enough so not to cover more than 10% of the cone of vision as seen from key observation points.

This project has been designed to meet the mitigation recommendations identified within Ecology's tool. Sited in a historically commercial lease boundary, and within a rural, mixed use area, including port and industrial properties, this project is expected to be visibly unobtrusive. The project will be located more than 1,800' from high bank observation points. Most (more than 50%) of the Project is located over 1,500' away from the ordinary high water mark (OHWM), and observation points on the land within 1,500 of the project are low bank. The location of the system within the bay was selected so that it would have the least amount of frontage impact to waterfront landowners or recreational boaters traveling north – south direction, while still providing efficiencies in design and maintenance. Locating the farm 1,500 from the OHWM on all sides would not appreciably reduce aesthetics, negatively impact farm efficiencies, and increase potential recreational impacts.

The project will follow federal and state regulations addressing floating aquaculture structures, along with best management practices. It is also sited and designed to minimize potential aesthetic impacts, and it will be maintained in a neat and orderly manner. Except for navigation aids, the project will use colors and materials that blend into the surrounding environment where practicable, provide the highest UV resistance, and most uniformity. In particular, the project will utilize black colors in the floating oyster bags. Advances in gear development since publication of the aquaculture siting study have improved the consistency and experience of aquaculture gear. Black-colored gear is consistent in quality and viewer experience. It strikes an optimum balance between blending into the environment while also being sufficiently visible to ensure it can be safely avoided by recreational and other users. In addition, black gear is more stable and UV-resistant compared to blue and green colored gear. As a result, the project is designed to minimize aesthetic impacts to the greatest extent feasible, and it will not substantially detract from the aesthetic qualities of the surrounding area, nor will it have a more than moderate aesthetic impact.



Figure 1: APEX Visualization – Rendering at 1,000' horizontal, 10 - 15' vertical.



Figure 2: Existing system in Vancouver. Visual from approx. 1,300' horizontal distance and 6' vertical



Figure 3 Existing system in Vancouver. Visual from approx. 50' horizontal distance and 6' vertical

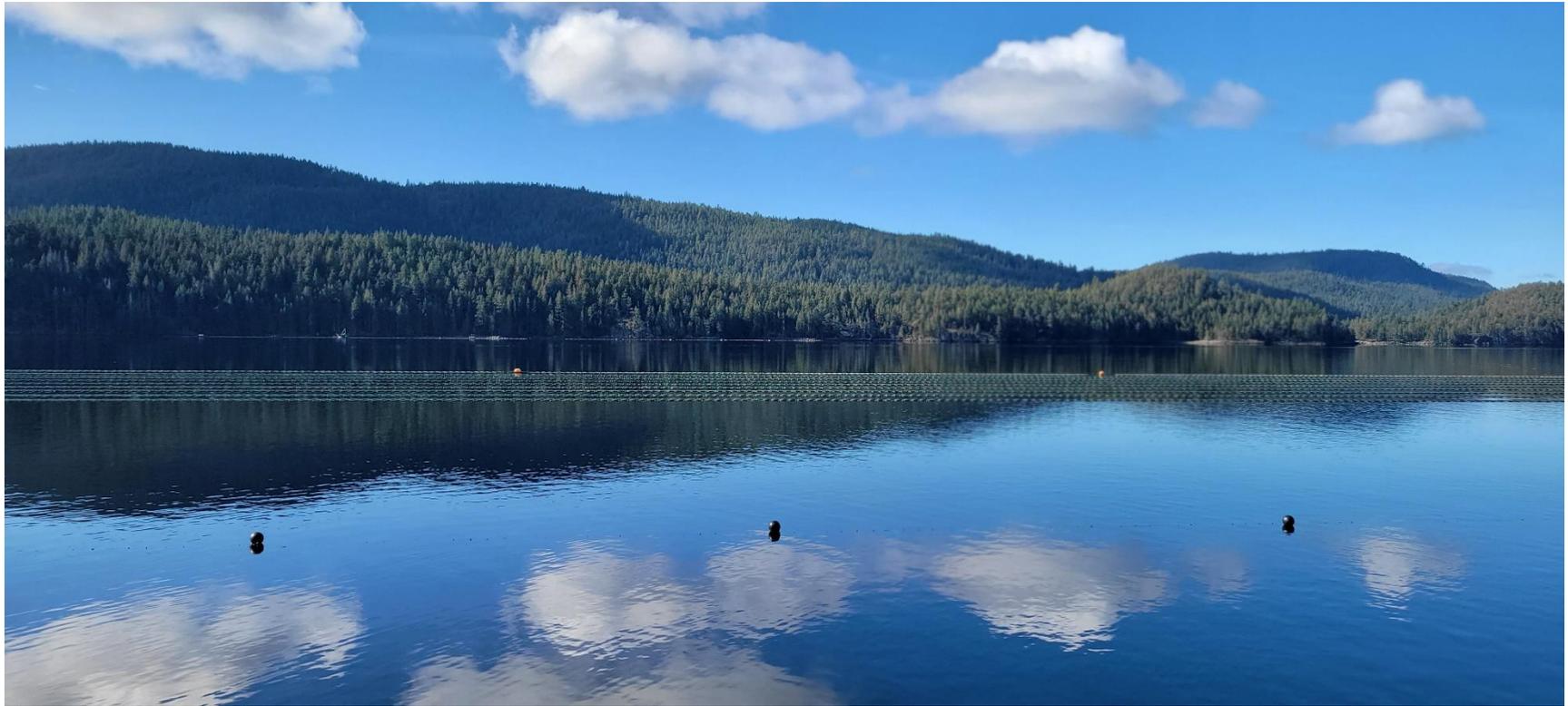


Figure 4 Existing system in Vancouver. Visual from approx. 400' horizontal distance and 10' vertical